



## Pattern of oral and dental diseases among children attending dental department in Dhaka shishu (children) hospital, Dhaka, Bangladesh: A cross sectional hospital based study

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### Abstract

**Introduction:** Oral and dental health is the standard of the oral and related tissue, which enables an individual to eat, speak, and socialize without active discomfort and embarrassment and which contributes to general well-being of the individual.

**Objective:** To find out Pattern of oral and dental diseases among children attending Dental Department in Dhaka Shishu (Children) Hospital, Dhaka, Bangladesh.

**Materials and Methods:** This was a cross sectional hospital based study carryout among 443 childrens (242 males and 201 females) attending in the Department of Paediatric dentistry in Dhaka Shishu (Children) Hospital. All the new patients attending to Dental OPD with the complained of oral and dental problems were included in this study. Old patients and those who were not willing to participate in the clinical examination for study were excluded from the study. The study period was January 2019 to Jun 2019.

**Results:** The study was carried out among (443) children were 242 (54.6%) males and 201 (45.4%) females a male-female ratio of 1.2:1. The age range of children were 224 (50.6%) below the, age of 5 years, 200 (45.1%) at the age of 5-10 years and 19(4.3%) above 10 years (10-14 years). Out of 443 children 157 (22.7%) showed presence of dental caries, 138 (19.9%) had grossly destructed carious teeth, 79 (11.5%) had dentoalveolar abscess, 53 (7.7%) had retained broken root, 52(7.6%) were suffering from pulpitis, 108 (15.7%) of the children presented with stomatitis, 34 (4.8%) had retained deciduous teeth, 24(3.5%) geographical tongue, 24(3.5%) oral thrush, 7(1.0%) gingivitis 7(1.0%) presented with traumatic injury of tooth, soft tissue and bony tissue, 4(0.5%) had pericoronitis, 1(0.1%) had natal tooth and 4(0.5%) were others like extra oral swelling, aphthous ulcer, mucocele. The total Association of dental disease with different age group. Among them Caries disease all group average high rate so p-Value (0.010\*). So grossly destructed due to caries 49 cases of 5 yrs. 35.5%, 85 cases of 5-10yrs. 54.1%, and 7 cases of under 15yrs. 5.1% significant.

**Conclusion:** Dental caries was the most predominant disease in the children followed by dentoalveolar abscess. Oral health promotion and planning programs directed towards the oral health should be conducted at regular intervals.

**Keywords:** children, dental caries, dentoalveolar abscess, oral diseases

### 1. Introduction

Oral and dental health is the standard of the oral and related tissue, which enables an individual to eat, speak, and socialize without active discomfort and embarrassment and which contributes to general well-being of the individual [1]. Neglect of oral disease in children frequently lead to serious general health problems significant pain, and interference with eating, overuse of emergency rooms and lost school time [2]. It has been estimated 51 million school hours per year are lost because of dental related illness alone [3]. Oral and dental diseases are common in the developing countries. The pattern of these diseases vary from on community to another, and depends on various factors like oral health care practice the level of dental awareness. With sufficient manpower, availability of modern dental equipment and a wide range of dental materials, oral health care for the child has improved in the past three decade. This has been attributed to advances in technology [4]. American academy of pediatric dentistry (AAPD) recommends that a child should visit the oral and dental health center with the appearance of the first tooth, typically at 6 months but not later than 1 year of age [5]. During this visit the developing

occlusion should be monitored throughout eruption at regular clinical intervene [6]. It has been shown that pre-school children who visited the oral and dental health center early will more likely visit for preventive reasons as adult [7]. Epidemiological studies have shown that the prevalence of dental diseases particularly dental caries is on the steady increase in developing countries as refined sugar, sweets and fruits drinks have become more available [8, 11]. Currently dental caries has become a serious problem in school children and periodontal disease is wide spread in adult population [12]. The purpose of the study is to assess the pattern of distribution of oral and dental diseases among children aged 1 month to 14 years visiting the hospital within a 3 months' time period. The objectives of this research were to identify the major and oral dental problems prevalent in the children so as to plan preventive programs according to their need.

### 2. Objective

To find out Pattern of oral and dental diseases among children attending Dental Department in Dhaka Shishu (Children) Hospital, Dhaka, Bangladesh.

### 3. Materials and Methods

This was a cross sectional hospital based study carryout among 443 childrens (242 males and 201 females) attending in the Department of Paediatric dentistry in Dhaka Shishu (Children) Hospital. All the new patients attending to Dental OPD with the complained of oral and dental problems were included in this study. Old patients and those who were not willing to participate in the clinical examination for study were excluded from the study. The study period was January 2019 to Jun 2019. All the patients were examined clinically and investigations were carried out for the required cases. The demographic data, pattern of oral and

dental diseases were recorded. Data were analyzed by chi-squared test by using SPSS Windows version 22.

### 4. Results

The study was carried out among (443) children patients who were attending in the dental OPD of Dhaka Shishu (Children) Hospital during the period of January 2019 to Jun 2019. There were 242 (54.6%) males and 201 (45.4%) females a male-female ratio of 1.2:1. The age range of children were 224 (50.6%) below the, age of 5 years, 200 (45.1%) at the age of 5-10 years and 19(4.3%) above 10 years (10-14 years) are shown in Table 1 to 2.

**Table 1:** Age Distribution of the Children (n=443)

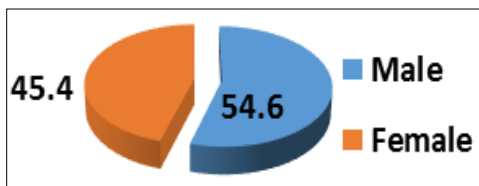
Age group	Frequency	Percentage (%)
<5 yrs.	224	50.6
5-10 yrs.	200	45.1
> 10 yrs.	19	4.3
Total	443	100.0
Mean± SD Range	4.85±2.77 (0.20–13.0) years	

Table-1 shows the highest number of child patient’s cases in below 5 year. 224 (50.6%) and 10 year out of 443 patients count above.

**Table 2:** Sex Distribution of the Children (n=443)

Sex	Frequency	Percentage (%)
Male	242	54.6
Female	201	45.4
Total	443	100.0
Male: female ratio	1.2:1	

Table-2 shows highest number of patients were male.



**Fig 1:** Pie diagram showing the sex distribution of the study subjects.

**Table 3:** Distribution of the study subjects by dentition (n=433)

Dentition	Frequency	Percentage (%)
No dentition	37	8.4
Primary dentition	248	56.0
Mixed dentition	150	33.9
Permanent dentition	8	1.8
Total	443	100.0

Table-3 shows out of 443 patients 36 patients (8.4%) have no dentition 248 (56.0%) were only primary duration 150

(33.5%) were mixed dentition and 8 (1.8%) were fully permanent dentition. Among them primary dentition group is highest number 228 (56.0%).

**Table 4:** Distribution of the study subjects by dental disease (n=443)

Dental disease	Frequency;	Percentage (%)
Caries	157	22.7
Grossly destructed due to caries	138	19.9
Stomatitis	108	15.7
Dento alveolar abscess	79	11.5
B.D.R	53	7.7
Pulpities	52	7.6
Retained deciduous teeth	34	4.8
Geographical tongue	24	3.5
Oral thrush	24	3.5
Gingivitis	7	1.0
Traumatic injury of tooth soft tissue bony tissue	7	1.0
Pericoronities	4	0.5
Natal teeth	1	0.1
Others	4	0.5

Table-4 shows the pattern and distribution of oral and dental disease seen in children. Out of 443 children 157 (22.7%) showed presence of dental caries, 138 (19.9%) had grossly destructed carious teeth, 79 (11.5%) had dentolveolar abscess, 53 (7.7%) had retained broken root, 52(7.6%) were suffering from pulpitis, 108 (15.7%) of the children presented with stomatitis, 34 (4.8%) had retained deciduous teeth,24(3.5%) geographical tongue, 24(3.5%) oral thrush, 7(1.0%) gingivitis 7(1.0%) presented with traumatic injury of tooth, soft tissue and bony tissue, 4(0.5%) had pericoronitis, 1(0.1%) had natal tooth and 4(0.5%) were others like extra oral swelling, apthus ulcer, mucocoeale.

**Table 5:** Association of age with dentition (n=443)

Age groups	n	No dentition N (%)	Primary dentition N (%)	Mixed dentition N (%)	Permanent dentition N (%)	p-value
<5	224	25(11.2%)	192(85.7%)	7(3.1%)	0(0.0%)	<0.001*
5-10 yrs.	200	12(6.0%)	55(27.5%)	132(66.0%)	1(0.5%)	
> 10 yrs.	19	0(0.0%)	1(5.3%)	11(57.9%)	7(36.8%)	
Total	443	37(8.3%)	248(55.9%)	150(33.9%)	8(1.9%)	

Figures in the parentheses indicate corresponding percentage;

Chi-squared Test ( $\chi^2$ ) was done to analyze the data, \* = significant

**Table 6:** Association of dental disease with different age group (n=443)

Diseases Patten Dental disease	n	Age Group			p-value 0.010*
		<5 yrs.	5-10 yrs.	> 10 yrs.	
Caries	157	65(41.4%)	85(54.1%)	6(3.8%)	0.001*
Grossly destructed due to caries	138	49(35.5%)	82(59.7%)	7(5.1%)	0.001*
Stomatitis	108	83(76.8%)	22(20.1%)	3(2.8%)	0.705 <sup>ns</sup>
Dento alveolar abscess	79	37(46.8%)	39(49.4%)	3(3.8%)	<0.001*
B.D.R	53	10(18.9%)	40(75.5%)	3(5.7%)	0.010*
Pulpitis	52	16(30.8%)	33(63.5%)	3(5.8%)	<0.001*
Retained deciduous teeth	34	0(0.0%)	31(91.2%)	3(8.8%)	0.001*
Geographical tongue	24	21(87.5%)	2(8.3%)	1(4.2%)	0.014*
Oral thrush	24	19(79.2%)	5(20.8%)	0(0.0%)	0.509 <sup>ns</sup>
Gingivitis	7	5(71.4%)	2(28.6%)	0(0.0%)	0.735 <sup>ns</sup>
Traumatic injury of tooth soft tissue bony tissue	7	4(57.1%)	3(42.9%)	0(0.0%)	0.101 <sup>ns</sup>
Pericoronitis	4	2(50.0%)	1(25.0%)	1(25.0%)	0.474 <sup>ns</sup>
Others	4	2(50.0%)	2(50.0%)	0(0.0%)	0.613 <sup>ns</sup>
Natal teeth	1	1(100.0%)	0(0.0%)	0(0.0%)	

Figures in the parentheses indicate corresponding percentage;  
Chi-squared Test ( $\chi^2$ ) was done to analyze the data, ns =not significant, \* significant

The total Association of dental disease with different age. Among them Caries disease all group average high rate so p-Value (0.010\*). So grossly destructed due to caries 49 cases of 5 yrs. 35.5%, 85 cases of 5-10yrs. 54.1%, and 7 cases of under 15yrs. 5.1% significant and all patients are another case disease. It was also seen that the prevalence of dental caries was somewhat similar among males (80.5%) and females (80.8%). But the younger children aged between 1 to 6 years showed more dental caries (85.5%) than the older children of 7 to 14 years (78.5%). However, this difference was not statistically significant (p = 0.11). Amongst the total children who reported in the hospital, 18.4% reported to the hospital after there was an evident facial swelling or draining pus from the sinus. They reported that they had experienced pain in the past due to caries, but did not seek dental treatment.

**5. Discussion**

This study was conducted to evaluate the pattern of distribution of oral and dental diseases in children in Dhaka Shishu (Children) Hospital. In this study, the predominant oral disease was found to be dental caries in 22.7% and its sequelae like grossel) carious teeth 19.9%, dent alveolar abscess-11.5% BDR 7.7% and pulpitis 7.6%. The next prevalence of oral diseases is oral piucosal disease like stomatitis- 15.7%, geographical tongue 3.5% and oral thrush-3.5%, Gingivitis 1.0%, Traumatic injury of tooth soft tissue bony tissue 1.0%, Pericoronitis 0.5%, Natal teeth 0.1% and other diasese 0.5%. Dental caries attributes to toothache and eventually children have to miss their school which will lead to poor performance of children in school. Severe dental decay was the main dental factor related to school absence in Thai children [13]. (Jurpati-Khothmory [6]. World health Organization reports 60-90% of school children worldwide have] experienced caries, with the disease being most prevalent in Asian and Latin American countries. 14 (jorpiti-Khathmory 3). It was also seen that the prevalence of dental carries and its sequelae like grosly carious teeth, pulpitis, dent alveolar abscess, (retained broken root was more in the age group of 5 to 10 years old child than the age group below 5 years. Dental caries is also known to be commonest cause of tooth loss because most

patients presents with advanced dental decay for which restorative treatment will not be possible. Complications arising from late presentation include dental abscess, grossly broken \$own crown, retained broken roots and osteomyelitis in severe cases. World Health Organization reports 60-90% of school children worldwide have experienced caries, with the disease being most prevalent in Asian and Latin American countries [15]. It was also seen that the prevalence of dental caries was somewhat similar among males (54.6%) and females (45.4%). But the younger children aged between 1 to 5 years showed more dental caries (85.7%) than the older children of 7 to 10 years (66.0%). Out of 443 children 157 (22.7%) showed presence of dental caries, 138 (19.9%) had grossly destructed carious teeth, 79 (11.5%) had dentolveolar abscess, 53 (7.7%) had retained broken root, 52(7.6%) were suffering from pulpitis, 108 (15.7%) of the children presented with stomatitis, 34 (4.8%) had retained decidous teeth,24(3.5%) geographical tongue, 24(3.5%) oral thrush, 7(1.0%) gingivitis 7(1.0%) presented with traumatic injury of tooth, soft tissue and bony tissue, 4(0.5%) had pericoronitis, 1(0.1%) had natal tooth and 4(0.5%) were others like extra oral swelling, apthus ulcer, mucocoeale. The total Association of dental disease with different age group. Among them Caries disease all group average high rate so p-Value (0.010\*). So grossly destructed due to caries 49 cases of 5 yrs. 35.5%, 85 cases of 5-10yrs. 54.1%, and 7 cases of under 15yrs. 5.1% significant. However, this difference was not statistically significant (p = 0.11). This is in accordance with the prevalence studies in Nepal which showed that younger children presented with more dental caries than older children. Lonim *et al* and B Subedi *et al* in their study have reported that 5-6 yrs. old had caries 52% and 69% whereas 12-13 years old children had 41% and 53.23% caries prevalence respectively in Nepalese population [3, 7]. Amongst the total children who reported in the hospital, 18.4% reported to the hospital after there was an evident facial swelling or draining pus from the sinus. They reported that they had experienced pain in the past due to caries, but did not seek dental treatment. 41.4% of children aged 1- 5 years and 49.4% of the children aged 6-10 years presented with dento-alveolar abscess. This difference was found to be statistically significant (p< 0.05).

Azodo CC *et al* have also reported that the untreated dental caries was the most common cause of dentoalveolar abscess in children, followed by trauma, failed restoration or periodontal infection [16]. The patients who visited the dental OPD considered the physiological mobility of the tooth as a major problem in the children. Shows out of 443 patients 36 patients (8.4%) have no dentition 248 (56.0%) were only primary duration 150 (33.5%) were mixed dentition and 8 (1.8%) were fully permanent dentition. Among them primary dentition group is highest number 228 (56.0%). The prevalence of malocclusion has increased in recent decades [17, 18]. Motivational factor for these patient was found to be esthetics, however, they were not aware of the functional or periodontal problems [17, 18]. This can be explained by the high frequency of falls seen in younger children resulting in trauma to the primary teeth [19]. Traumatic injuries in primary teeth is commonly more in children aged between 13 and 24 months [20]. It was also seen that the prevalence of dental caries was somewhat similar among males (80.5%) and females (80.8%). But the younger children aged between 1 to 6 years showed more dental caries (85.5%) than the older children of 7 to 14 years (78.5%). However, this difference was not statistically significant ( $p = 0.11$ ). Amongst the total children who reported in the hospital, 18.4% reported to the hospital after there was an evident facial swelling or draining pus from the sinus. They reported that they had experienced pain in the past due to caries, but did not seek dental treatment.

## 6. Conclusion

In this study dental caries was seen to be the most prevalent oral disease among children of 1 to 10 years above of age. Therefore, it can be derived from this study that priority should be given to the treatment and control of dental caries so as to decrease the prevalence of oral diseases as a whole. Rehabilitative care targeted towards treatment of the existing problems of dental caries should be made available to the children. Along with this, oral health education programs at individual, and community levels should be implemented aimed primarily at increasing the knowledge and awareness of the communities towards the risk factors associated with oral problems in order to prevent further increase of occurrence of dental caries among children. A significant 95.4% of the children made symptomatic visit. Periodontal disease was the most prevalent finding followed by dental caries. There is an urgent need to increase dental health awareness among children through Hospital based continuing dental tips and also among other pediatric care givers such as parents and pediatricians.

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